

ABSTRACT OF THE DISCLOSURE

An apparatus for a liquid drop emitter, especially for use in an ink jet printhead, is disclosed. A chamber filled with a liquid, a nozzle and a thermo-mechanical actuator, extending into the chamber from at least one wall of the chamber is disclosed. A movable element of the thermo-mechanical actuator is configured with a bending portion which bends when heated, the bending portion having at least one actuator opening for passage of the liquid. Apparatus is adapted to apply heat pulses to the bending portion resulting in rapid deflection of the movable element, ejection of a liquid drop, and passage of liquid through the at least one actuator opening. A movable element configured as a cantilever or as a beam extending from anchor walls of the chamber is disclosed. The thermo-mechanical actuator may be formed as a laminate structure including a layer constructed of a deflector material having a high coefficient of thermal expansion and that is electrically resistive, for example, titanium aluminide. Apparatus adapted to apply heat pulses comprising a resistive heater formed in the deflector material in the bending portion is also disclosed.